

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A signal level detector comprising:

a first voltage/current conversion circuit which outputs a first current which depends on a voltage amplitude of an inputted signal;

a second voltage/current conversion circuit which outputs a second current which depends on an inputted reference voltage signal; and

a comparison circuit which compares the first current with the second current and outputs an output ~~current~~ signal based on a comparison result,

wherein the first voltage/current conversion circuit outputs the first current which depends on a square of a voltage amplitude of the inputted signal, and the second voltage/current conversion circuit outputs the second current which depends on a square of an amplitude of the inputted reference voltage signal.

Claim 2 (Original): The signal level detector according to claim 1, wherein the inputted signal is a differential signal, and the inputted reference voltage signal includes two reference voltages.

Claim 3 (Canceled).

Claim 4 (Original): The signal level detector according to claim 1, further comprising a first capacitance element and a second capacitance element respectively connected between an output terminal of the first voltage/current conversion circuit and a ground potential and between an output terminal of the second voltage/current conversion circuit and the ground potential.

Claim 5 (Original): The signal level detector according to claim 1, further comprising a first resistance element and a second resistance element, respectively connected between an

output terminal of the first voltage/current conversion circuit and a ground potential and between an output terminal of the second voltage/current conversion circuit and the ground potential.

Claim 6 (Currently Amended): The signal level detector according to claim 1, wherein the comparison circuit includes, as an output end, a connection node directly connecting between an output terminal of the first voltage/current conversion circuit and an output terminal of the second voltage/current conversion circuit ~~are directly connected to each other and form one output end~~.

Claim 7 (Original): The signal level detector according to claim 6, wherein the first current is a charging current which flows out from the output terminal, and the second current is a discharging current which flows into the output terminal.

Claim 8 (Original): The signal level detector according to claim 6, wherein the first current is a discharging current which flows into the output terminal, and the second current is a charging current which flows out from the output terminal.

Claim 9 (Original): A signal level detector comprising:
a first squaring circuit to which a first voltage signal is inputted and which outputs a first current including a square component of an input amplitude of the first voltage signal;
a second squaring circuit to which a reference voltage signal is inputted and which outputs a second current including a square component of an amplitude of the reference voltage signal; and
a comparison circuit which compares a first output voltage which is in proportion to the first current with a second output voltage which is in proportion to the second current, and outputs a control signal used to detect the first voltage signal based on a comparison result.

Claim 10 (Original): The signal level detector according to claim 9, wherein the first voltage signal is a differential signal, and the reference voltage signal includes two reference voltages.

Claim 11 (Original): The signal level detector according to claim 9, further comprising a first capacitance element and a second capacitance element respectively connected between an output terminal of the first squaring circuit and a ground potential and between an output terminal of the second squaring circuit and the ground potential.

Claim 12 (Original): The signal level detector according to claim 9, further comprising a first resistance element and a second resistance element respectively connected between an output terminal of the first squaring circuit and a ground potential and an output terminal of the second squaring circuit and the ground potential.

Claim 13 (Currently Amended): The signal level detector according to claim 9, wherein the comparison circuit includes, as an output end, a connection node directly connecting between an output terminal of the first squaring circuit and an output terminal of the second squaring circuit ~~are directly connected with each other and form one output end.~~

Claim 14 (Original): The signal level detector according to claim 13, wherein the first current is a charging current which flows out from the output terminal, and the second current is a discharging current which flows into the output terminal.

Claim 15 (Original): The signal level detector according to claim 13, wherein the first current is a discharging current which flows into the output terminal, and the second current is a charging current which flows out from the output terminal.

Claim 16 (Currently Amended): An amplification factor control system comprising:

an amplification circuit which output an output signal by amplifying a reception signal inputted thereto with an amplification factor according to a control signal; and

a signal level detector to which the output signal is inputted and which includes a first voltage/current conversion circuit which outputs a first current which depends on a voltage amplitude of ~~an inputted~~ the output signal, a second voltage/current conversion circuit which outputs a second current which depends on ~~an inputted~~ a reference voltage signal inputted thereto, and a comparison circuit which compares the first current with the second current and outputs the control signal based on a comparison result[[:]] and

~~an amplification circuit to which the control signal of the signal level detector is inputted, and which outputs an output signal obtained by amplifying an inputted reception signal with an amplification factor according to the control signal and determines the output signal as the detection signal which is inputted to the signal level detector.~~

Claim 17 (Currently Amended): The amplification factor control system according to claim 16, wherein the first voltage/ current conversion circuit outputs the first current which depends on a square of a voltage amplitude of the ~~inputted~~ output signal, and the second voltage/current conversion circuit outputs the second current which depends on a square of an amplitude of the ~~inputted~~ reference voltage signal.

Claim 18 (Currently Amended): The amplification factor control system according to claim 16, wherein the control signal ~~has a third voltage when~~ increases with increase in the output signal from the amplification circuit ~~is a first voltage having a first amplitude, and the control signal has a fourth voltage larger than the third voltage when the output signal from the amplification circuit is a second voltage having a second amplitude larger than the first amplitude.~~

Claim 19 (Currently Amended): The amplification factor control system according to claim 16, wherein the control signal ~~has a third voltage when~~ decreases with decrease in the output signal from the amplification circuit ~~is a first voltage having a first amplitude, and the~~

~~control signal has a fourth voltage smaller than the third voltage when the output signal from the amplification circuit is a second voltage having a second amplitude larger than the first amplitude.~~

Claim 20 (Original): The amplification factor control system according to claim 16, further comprising a capacitance element connected between a terminal to which the control signal is applied and a ground potential.

Claim 21 (New): A signal level detector comprising:

a first voltage/current conversion circuit which outputs a first current which depends on a voltage amplitude of an inputted signal, the inputted signal being a differential signal;

a second voltage/current conversion circuit which outputs a second current which depends on an inputted reference voltage signal, the inputted reference voltage signal including two reference voltages; and

a comparison circuit which compares the first current with the second current and outputs an output signal based on a comparison result.